

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 line 2 recites "cause the latter ...". Examiner is unsure as to what limitations or structure are being referred to by "the latter". Correction is requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10-15 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yang(2002/0020154).

Yang teaches a cyclonic separation apparatus comprising a cylindrical vortex starting chamber(1a) and frustoconical cyclonic separation chamber(2a), wherein the separation chamber is formed from a first frusto-conical region and a second frustoconical region, the first region has a larger cone angle than that of the second region for the purpose of reducing the overall axial length of the cyclone separation chamber, the cone angle of the first region being in the range of 40 to 80 degrees and

that of the second region being in the range of 16 to 28 degrees, the apparatus further comprising a particle and/or liquid collecting bin(2d) downstream of the second separation region, and being arranged to separate dry particulate material or liquid from air and for collecting the particulate material or liquid in the bin. Yang further teaches a central tubular member which extends axially of the cylindrical chamber and comprises a vortex starter and the wide end of the first frustoconical region begins in the region of the upstream end of the central tubular member. Yang further teaches wherein the wall of the upstream end of the central tubular member is apertured (figure 1) and the frustoconical wall of the first region, which is close to the apertured lower end of the central tubular member, in use forces a progressive reduction in radius on the circulating airstream and therefore a corresponding increase in its rotational velocity in the region of the apertures and just before the airstream enters the second frustoconical cyclone section. Yang further teaches wherein the two cones angles are 68 degrees and 20 degrees respectively. Yang further teaches wherein the two cone angles are 64 degrees and 24 degrees respectively. Yang further teaches wherein reduction in overall axial length of the cyclone separation chamber cause the latter to protrude to a lesser extent into the collecting bin than if a single frusto-conical region were employed having the same cone angle as the second region and the same entrance diameter as the cylindrical vortex starting chamber, thereby increasing the available storage volume of the bin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah
April 14, 2008

/Robert A Hopkins/
Primary Examiner, Art Unit 1797